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The Old White Americans

By

ALEŠ HRDLIČKA

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Extract from
PROCEEDINGS OF THE NINETEENTH INTERNATIONAL CONGRESS
OF AMERICANISTS, WASHINGTON, DECEMBER, 1915

Washington, D. C.

1917

The Old White Americans

By

ALEŠ HRDLIČKA

THE OLD WHITE AMERICANS

BY ALEŠ HRDLIČKA

INTRODUCTION

FROM early in the seventeenth century the Temperate Zone of North America has been receiving successive contingents of the white race who have settled on the available land and multiplied and spread, thus forming the American nation. These newcomers were derived from Europeans of various physical types, ranging from the prevalently tall, blond, blue-eyed dolichocephalic Northmen to the mostly dark-haired, brown-eyed, medium tall, and brachycephalic Celts; and according to all indications they were, as a lot, physically, and especially mentally, above the average of their parent groups, for both the pioneers, whose ideals were religious and political liberty, and who would brave the dangers of the long sea journey with the hard conditions of life in the New World, as well as those commonly classed as adventurers, can well be assumed to have been on the whole men with a surplus of mental power and physical energy.

The men, and the women who accompanied them and who were probably of similar good material, encountered in large measure new environments and lived a new life. They reared their families under these changed influences, and the children accommodated themselves completely to the new conditions—they became Americans. Then followed intermarriage, both within and without the various contingents that reached this land, and the original heterogeneity slowly gave place to a blend which constituted the body of the rising nation.

How successful this new conglomerate proved to be, morally, intellectually, in defense and otherwise, are matters of history. It is certain that there was no loss of the original endowments; and also that there resulted in the course of time a considerable approach to unification of all those characteristics of mentality and behavior which are most readily subject to adaptation. It may be safely said that so far as outward manifestations are concerned, the descendants of the Old Americans constitute today a fairly easily separable strain of white people, which is no longer English, Dutch, French, or Irish, but *American*.

In view of these interesting facts anthropology for a long time has been confronted with the question, Have there also taken place in the descendants of the Old Americans physical changes which produced, or tend to produce, a separate sub-type of the white people?

We know that changed environment and consequent changed habits of life react more or less strongly upon the body, and that the latter tends to accommodate itself efficiently, harmoniously, and permanently to all enduring influences that affect the individual. Has the American strain been subject long enough to the new influences to establish such an accommodation? And if so, has this accommodation been sufficiently substantial to result in perceptible modifications of the physical type of the people? If such physical changes have taken place or are taking place, are they uniformly in the direction of improvement, or is there

also some degeneration? Possibly even in some important respects the type has already passed its zenith, as would seem to be indicated by the lowering birth-rate among its latest representatives, a rate now hardly sufficient in many districts to keep up the numbers of the Old Americans. And how will the type, if it exists, be affected by the growing mixture with whites of recent immigration? Would it be well to try to keep it pure—have the Old Americans marry only among Old Americans—or is new blood desirable?

It is well known that such nationalities as the French, English, German, and others possess, notwithstanding their mixed and relatively recent origin, distinctive physiognomy and other physical features by which in a large majority of cases it is possible to segregate both men and women who belong to them, and the claim has often been made that much the same is true in relation to the Americans. Writers and illustrators have made frequent efforts to define this hypothetical American type, and have even arrived at certain crystalized conceptions, such as "Uncle Sam", the "American girl", and the "American young man", though inconsistently leaving out the remaining periods of life. The Southerner in particular, and the Yankee, as well as the Westerner, are believed each to have distinctive characteristics by which in the majority of cases they can readily be identified; yet at the same time these "types" are supposed to differ from each other so that any one of wider experience can readily distinguish them. Writers who attempt to define the American physical type do so generally without entering into embarrassing particulars; and the artist either follows certain famous or admired individual types or creates abstract conceptions of what he would have as Americans. Suggestions have even been advanced by some, who might have been expected to know better, that the American type is approaching that of the American Indian, the idea being presumably that the American environment produced the Indian and that it would in due time shape other peoples here to the same mold. Finally, certain scientific reports on the physical changes of Jewish and Italian children in this country appeared to show that the type of the immigrant changed with remarkable rapidity.¹ Were this true, the formation of a new, more homogeneous American type ought to be a question of but a few generations, and the type should be already well advanced toward maturity among the descendants of the oldest American families. Unfortunately, however, although under good direction, the examinations on which these results were based were made by college students and not by trained anthropologists; the grandparents and parents of the supposedly changing children were not examined, nor were the children themselves studied at different periods of development; and no data have been given on the important and often significant variations in the children of individual families; so that it is not certain whether the differences the Jewish and Italian children seemed to show from the general type of their nationality or group were not perhaps fortuitous, or hereditary, and thus of pre-American origin.

The above uncertainties can properly be met in but one way, and that by anthropological observations on normal living representatives of the oldest American families, carried on under favorable circumstances and with the

¹ F. Boas, *Changes in Bodily Form of Descendants of Immigrants*, Report of the U.S. Immigration Commission, Washington, 1911, Columbia University Press, 1912; discussion in *American Anthropologist*, 1911, no. 3, p. 394; 1912, no. 3, p. 530; 1913, no. 2, p. 163.

greatest possible care and precision. Such a test the writer decided to apply, so far as it might be in his power; and with this view arrangements were made, in the fall of 1912, in the anthropological laboratory of the United States National Museum, for a series of investigations which should extend to at least 300 healthy adult descendants from old American families. Since that time, save for interruptions due to other demands on the writer's time, the work has been progressing slowly. The number of subjects stated, 150 men and 150 women, is regarded by the writer as the smallest number which in a fairly uniform group would cover the more important individual variations in the group and thus give a reasonably clear notion of the type. To make certain that only those would be included in the series whose families have long been subject to the effects of the American environment, it was decided to examine only those who on both sides were American for at least three generations; in other words, those whose parents and all grandparents were born in this country. As to locality, Washington was recognized as the most suitable for the study, for among those settled here as well as among visitors there are Americans from all parts of the country. The measurements and tests, finally, were to be sufficiently thorough to show clearly the physical type of those examined, but involve only a minimum of inconvenience to the subject and a minimum of exposure of the body. To avoid including those not fully developed and the decrepit, the age limits were set at from 24 to 60 years; otherwise there was no selection.

It was anticipated from the outset that the study would be prolonged, but the scarcity of duly qualified subjects, which soon became apparent, was unexpected. Time and again willing friends who thought they had numerous acquaintances that could well qualify for the tests came disappointed; the majority of those approached had perhaps a long line of pure American ancestry on one side, but on the other there was a foreign-born grandmother or grandfather, or perhaps the birth-place of one of these was uncertain, hence the subject could not be included. When the supply of those who could be reached personally or through friends was exhausted, an appeal was made to the local branches of patriotic societies, and their aid was secured, yet even these sources did not prove sufficient.

As a total result of the efforts made there have been examined to date 140 men and 135 women, including representatives of some of the very oldest and best American families. The conditions of the examination have been ideal: a well-lighted laboratory, the best of instruments tested by standards, no haste, and every subject dealt with with all due care by the writer himself; the possibilities of error, therefore, it is safe to say, have been reduced to the minimum, and the data obtained may claim more than ordinary confidence. They are presented here in preliminary form, yet even thus they are of considerable interest.

The present report will deal, for the sake of easier presentation of the results, with the first 100 men and 100 women who were measured. The data will be given in brief form only, detailed discussion being reserved until the work shall have been completed. The results will doubtless be modified somewhat by the additional number of subjects to be examined, yet on the whole the changes can not be expected to be very material and the data as here presented may already be regarded as fairly definite.

The most striking result of the examinations is the great range of variation among the Old Americans in nearly all the important measurements. The range of variation is such that in some of the most significant determinations it equals not only the variation of any one group, but the combined variation of all the groups that enter into the composition of the Americans. Yet it will be seen that there are also interesting and important exceptions in this respect: these relate particularly to the measurements of the face, hands, and feet.

Besides the individual variations, certain marked differences will be seen to appear in both the physical and the physiological status between the two sexes. On the whole, it may be said that the male representatives of the Old Americans are excellent specimens of humanity, and there are also physically splendid individual women; but a certain proportion of the latter sex shows a physical development, especially in the upper part of the body, which leaves more or less to be desired. It seems, however, that this is largely a result of long-lasting defects in the proper rearing of female children from the physical standpoint rather than a matter of heredity, and that conditions in this respect are much improved in the present generation of young women.

We may now proceed with the individual determinations. Comparisons with other nationalities or races must, of course, in this preliminary account be reduced to the minimum.

STATURE

The stature of both American men and women is high, higher than the average of any European nation, except the Scotch (Beddoe's series). The difference between males and females amounts to 12.5 cm., or 7.2 per cent, which is near the general average of the white race. The individual variation is, however, enormous, amounting to 16.4 per cent of the average in the males, and to nearly 16 per cent in the females, among only 100 individuals, it must be remembered, of each sex.

STATURE

Average: Males 173.8 cm.; Females 161.3 cm.
 Minimum " 158.5 cm.; " 149. cm.
 Maximum " 189.5 cm.; " 177.3 cm.

TABLE OF FREQUENCIES

	below 150	150.1 155	155.1 160	160.1 165	165.1 170	170.1 175	175.1 180	180.1 185	185.1 190
Males: Per cent....	.....	.....	1	3	19	35	33	8	1
Females: Per cent..	1	15	25	34	16	8	1	.....	.....

WEIGHT

The average weight of the male Americans reaches 154 pounds, or very nearly 70 kilograms, while that of the females is 130 pounds, or 59 kilograms. Taking into consideration the tall stature, these weights are about equal to those among Europeans (of Quetelet). The difference between males and females is 15.6 per cent; among larger series of Europeans it ranges about 17 per cent, which indicates a slightly greater tendency to stoutness (among those above 30

years) among the American women than among their European sisters. If we look over the details of distribution of the weights, we see that 70 per cent of the males weigh between 131 and 170 pounds, and that nearly 70 per cent of the women weigh between 100 and 140 pounds. Less than 10 per cent of the men, but at least 17 per cent of the women, are decidedly under weight; the proportion of stout individuals is nearly the same in the two sexes.

WEIGHT

Average: Males 154 lbs. (70 kg); Females 130 lbs. (59 kg).

Minimum " 119 " " 89 "

Maximum " 223 " " 206 "

TABLE OF FREQUENCIES

Males	lbs.	119 120	121 130	131 140	141 150	151 160	161 170	171 180	181 190	191 200	201 210	211 220	221 230
	No. and per cent of cases	2	9	22	16	20	13	7	3	2	3	2	1

Females	lbs.	89 90	91 100	101 110	111 120	121 130	131 140	141 150	151 160	161 170	171 180	181 190	191 200	201 210
	No. and per cent of cases	2	4	15	24	13	15	6	10	5	2	1	..	3

HEIGHT OF TRUNK, NECK, AND HEAD

("The Sitting Height")

In the Old World whites the average sitting height ranges from 51.5 to 54 per cent of the stature in the males, and slightly higher, owing to relatively shorter legs, in the females;¹ in the Americans the averages in both sexes are above the mean of this variation, showing that the body above the ischia is relatively high. This point is of special interest inasmuch as it shows that the tall stature of the Americans is not due to any disproportionate elongation of the lower limbs. The relative shortness of legs in the females is shown especially well in the table of distribution of the measurements; the sitting height amounts to 55.1 per cent or above of the stature in only six males, but in 31 females.

SITTING HEIGHT

Per cent of Stature:

Average: Males 53.1; Females 54.3

Minimum " 50.2 " 50.7

Maximum " 57.4 " 57.2

TABLE OF FREQUENCIES

	50.1 51	51.1 52	52.1 53	53.1 54	54.1 55	55.1 56	56.1 57	57.1 58
Males: Per cent . . .	4	17	28	31	14	5	.....	1
Females: Per cent . .	1	5	11	25	27	22	8	1

¹ Compare V. Giuffrida-Ruggeri, Documenti sull' indice schelico; Volume giubil, i. o. d. Giuseppe Sergi, *Rivista di Antropologia*, xx, Rome, 1916.

THE CHEST

The dimensions and relative proportions of the chest in the males are about medium for whites; in many of the females, however, the chest is relatively narrow. Thus, while only in one of the 100 males the breadth of the chest was below 26 cm., there were 41 per cent of the females that showed smaller dimensions; and the narrowness was only too often accompanied by poor development of the breasts and the shoulders.

CHEST: BREADTH¹

MALES 100: FEMALES 65

Average: Males 29.9 cm.; Females 26.5 cm.
Minimum " 25.4 " " 22.2 "
Maximum " 35.5 " " 30.9 "

TABLE OF FREQUENCIES

Cm.	Up to 23.9	24– 24.9	25– 25.9	26– 26.9	27– 27.9	28– 28.9	29– 29.9	30– 30.9	31– 31.9	32– 32.9	33 and above
Males:											
Per cent.....			1	3	7	19	29	13	12	12	4
Females:											
Per cent.....	9.1	13.8	18.5	21.5	15.4	7.7	7.7	6.1	.....	.....	.....

CHEST: DEPTH¹

MALES 100: FEMALES 65

Average: Males 21.8 cm.; Females 20.5 cm.
Minimum " 16.3 cm.; " 16.9 cm.
Maximum " 29.4 cm.; " 26.3 cm.

TABLE OF FREQUENCIES

Cm.	Up to 17.9	18– 18.9	19– 19.9	20– 20.9	21– 21.9	22– 22.9	23– 23.9	24– 24.9	25– 25.9	26– 26.9	27–and above
Males:											
Per cent	.....	7	10	14	28	19	7	6	1	3	4
Females:											
Per cent	6.1	20	24.6	10.8	20	4.6	4.6	3.1	3.1	1.5	.....

CHEST: INDEX $\left(\frac{\text{Depth} \times 100}{\text{Breadth}} \right)$

Average Males (100) 72.8 Females (65) 77.–
Minimum " 55.8 " 61.9
Maximum " 85.5 " 91.5

¹ Mean between inspiration and expiration, at the level of the upper border of the fourth cartilage.

TABLE OF FREQUENCIES

Index	55.1 60	60.1 65	65.1 70	70.1 75	75.1 80	80.1 85	85.1 90	90.1 95
Males: Per cent.....	2	6	25	38	15	13	1	.....
Females: Per cent.....	.....	1.5	9.2	24.6	36.9	20.-	4.6	3.1

THE HEAD

The head among the Old Americans is in many cases remarkable for its good development. This is particularly noticeable in the males, as will be seen from the following tables, especially from that showing the cephalic module, or mean diameter of the head. It will be interesting to note in this connection that among twelve groups of male immigrants from Europe measured within the last two years at Ellis Island under the writer's direction, and comprising together more than 500 individuals, not one group equals in this respect the Americans, the closest approach being noted in the Irish, English, Poles, and North Italians.

The type of head, however, differs among the Americans very widely. (See table on cephalic index.) Twelve per cent of the males and four per cent of the females only are dolichocephalic; approximately 60 per cent of males and 50 per cent of females are mesocephalic, while 24 per cent of the males and 43 per cent of the females are brachycephalic, 12 per cent of each sex being decidedly so. There is surely in this important respect no perceptible approximation as yet to any definite type, unless it be the mesocephalic or intermediary.

An especially interesting condition in view of the ancestry of the Old Americans, which was in the main Anglo-Saxon or Nordic, is the scarcity of dolichocephaly, with a relative frequency of the broader-headed forms. The causes of this are difficult to analyze, owing to the complexity of the family mixtures and to various unknown factors, yet it seems doubtful if the original and probably moderate influx of Celtic and other brachycephaly into the Old American stock could alone account for the scarcity of relatively narrow and the frequency of relatively broad heads in this stock at the present time. In other words, we are confronted here with a problem as to whether a gradual change toward relatively broad heads has not become manifest in this stock, owing to the American environment; and the writer is inclined to accept provisionally such a conclusion.

The height of the American head may be referred to as good, but not excessive.

HEAD: LENGTH MAXIMUM

Average:	Males	19.7 cm.;	Females	18.65 cm.
Minimum	"	18.2 "	"	17.3 "
Maximum	"	21.6 "	"	20.1 "

TABLE OF FREQUENCIES

Cm.	17.3 17.6	17.7 18	18.1 18.4	18.5 18.8	18.9 19.2	19.3 19.6	19.7 20	20.1 20.4	20.5 20.8	20.9 21.2	21.3 21.6
Males:											
Per cent.....	.....	.....	1	7	20	21	25	15	9	.....	2
Females:											
Per cent.....	3	12	22	24	28	7	3	1	.....	.....	.....

HEAD: BREADTH MAXIMUM

Average: Males 15.4 cm.; Females 14.8 cm.

Minimum " 14.4 " " 13.7 "

Maximum " 16.4 " " 16.1 "

TABLE OF FREQUENCIES

Cm.	13.7 14	14.1 14.25	14.3 14.5	14.6 14.75	14.8 15	15.1 15.25	15.3 15.5	15.6 15.75	15.8 16	16.1 16.25	16.3 16.5
Males:											
Per cent.....			3	6	12	20	17	18	17	3	4
Females:											
Per cent.....	5	7	17	13	30	15	6	5	1	1	.....

CEPHALIC INDEX

Average: Males 78.3; Females 79.5

Minimum " 70.3 " 72.6

Maximum " 87.2 " 86.1

TABLE OF FREQUENCIES

Index	70.3- 72.5	72.6- 75	75.1- 77.5	77.6- 80	80.1- 82.5	82.6- 85	85.1- 87.5
Males: Per cent.....	3	9	34	30	12	9	3
Females: Per cent.....		4	21	32	31	10	2

HEAD: HEIGHT ¹

Average: Males 13.8 cm.; Females 13.25 cm.

Minimum " 12.5 " " 11.9 "

Maximum " 15.0 " " 14.3 "

TABLE OF FREQUENCIES

Cm.	11.9	12.- 12.3	12.4 12.7	12.8 13.1	13.2 13.5	13.6 13.9	14.- 14.3	14.4 14.7	14.8 15
Males: per cent.....			1	4	21	36	23	13	2
Females: Per cent.....	2	1	14	28	27	19	9	.....	.....

CEPHALIC MODULE $\left(\frac{L. + B. + H.}{3}\right)$

Average: Males 16.30 cm.; Females 15.60 cm.

Minimum " 15.37 " " 14.80 "

Maximum " 17.57 " " 16.65 "

¹ Biauricular line (floor of auditory meatus to bregma, with Hrdlička's compass, Collin).

TABLE OF FREQUENCIES

Cm.	14.75 15	15.01 15.25	15.26 15.5	15.51 15.75	15.76 16	16.01 16.25	16.26 16.5	16.51 16.75	16.76 17	17.01 17.25	17.26 17.5	17.51 17.75
Males: Per cent	.....	.....	4	6	12	19	41	8	9	.....	.....	1
Females: Per cent	7	15	24	21	22	7	1	3	.....	.....	.....	.....

CEPHALIC MODULE VS. STATURE (*Stature=1000*)

Average: Males 93.9; Females 96.6
 Minimum " 86.2 " 86.-
 Maximum " 102.8 " 105.3

TABLE OF FREQUENCIES

	86.0- 88	88.1- 90	90.1- 92	92.1- 94	94.1- 96	96.1- 98	98.1- 100	100.1- 102	102.1- 104	104.1- 105.3
Males: Per cent.....	4	7	17	23	28	12	5	3	1	.....
Females: Per cent.....	2	1	8	16	18	17	19	12	5	2

THE FACE

The face among the descendants of the Old Americans is characterized principally by the subdued dimensions of the malar bones and the absence of protrusion of the angles of the lower jaw. On the average, and considered as a whole, it is rather high, and in the younger persons oval in outline, with the base nearly as full, owing to soft parts, as the upper part, and the two sides nearly parallel. In the females it frequently gives the impression of narrowness.

The actual measurements show that the height from chin to nasion averages in fact slightly less than in many European whites, where it ranges about 11.8 to 12.7 cm. in the males and 10.6 to 11.6 cm. in the females. The relative lowness of this part of the face, especially in the females, is connected with a reduced development of the jaws.

On the other hand, the total facial height, or that from chin to hair-line, stands almost at the top of the European averages, which range from 17.7 to 18.6 cm. in the males and from 16.7 to 17.5 cm. in females (Martin), owing to the good development of the forehead in both sexes. Another interesting fact is that the average height of the forehead in the females (6.4 cm.) very nearly equals that of the males (6.6 cm. in 88 individuals).

The facial breadth (diameter bizygomatic maximum) ranges in various European groups from 13.6 to 14.2 cm. in the average among males, and from 12.7 to 13.4 cm. among the females; the Americans, with the averages of 13.9 and 13.2 cm. respectively, occupy about a medium position in comparison with Europeans. Considering, however, the tall stature and large head of the Americans, the face must be said to be relatively narrow, at least in a large proportion of the individuals.

The morphologic index of the face is mesoprosopic; the physiognomic index is low, owing to the conditions just referred to.

The minimum frontal diameter averages 10.6 cm. in the males and 10.2 cm. in the females, which are very fair dimensions. A tendency toward broad foreheads in the males will be particularly noticeable in the table of distribution of the measurement.

FACIAL INDEX: MORPHOLOGIC

$$\left(\frac{\text{Menton-nasion height} \times 100}{\text{Facial breadth}} \right)$$

Average: Males 86.3; Females 85.2
 Minimum " 73.3 " 76.8
 Maximum " 98.5 " 96.—

TABLE OF FREQUENCIES

Index	below 74	74.— 77.9	78.— 81.9	82.— 85.9	86.— 89.9	90.— 93.9	94.— 97.9	98 and above
Males: Per cent.	1	4	13	31	31	12	7	1
Females: Per cent. ....	.....	5	18	32	32	12	.....	1

FACE: MENTON-NASION HEIGHT

Average: Males 12.— cm.; Females 11.1 cm.
 Minimum " 10.4 " " 10.— "
 Maximum " 13.4 " " 12.3 "

TABLE OF FREQUENCIES

Cm.	10.— 10.3	10.4— 10.7	10.8— 11.1	11.2— 11.5	11.6— 11.9	12.— 12.3	12.4— 12.7	12.8— 13.1	13.2— 13.4
Males: Per cent. ....	.....	4	10	9	28	20	15	12	2
Females: Per cent.	10	14	31	25	12	8	.....	.....	.....

FACE: MENTON-CRINION HEIGHT¹

MALES 72² FEMALES 100

Average: Males 18.4 cm.; Females 17.5 cm.
 Minimum " 17.— " " 15.6 "
 Maximum " 20.7 " " 19.3 "

TABLE OF FREQUENCIES

Cm.	15.6— 16	16.1— 16.5	16.6— 17	17.1— 17.5	17.6— 18	18.1— 18.5	18.6— 19	19.1— 19.5	19.6— 20	20.1— 20.7
Males: Per cent. ....	.....	.....	1	10	25	26	12	8	14	4
Females: Per cent.	4	9	13	21	27	19	5	2	.....	.....

¹ Hair-line.

² In 28 some hair over the forehead has been lost.

FACIAL BREADTH

(Diameter bizygomatic maximum)

Average: Males 13.9 cm.; Females 13.- cm.
 Minimum " 13.- " " 12.- "
 Maximum " 15.- " " 14.6 "

TABLE OF FREQUENCIES

Cm.	12.- 12.3	12.4 12.7	12.8 13.1	13.2 13.5	13.6 13.9	14.4 14.3	14.4 14.7	14.8 15
Males: Per cent.....	.....	.....	8	15	31	31	12	3
Females: Per cent.....	7	22	33	25	11	1	1	.....

FACIAL INDEX: PHYSIOGNOMIC

$$\left(\frac{\text{Facial breadth} \times 100}{\text{Menton-crinion height}} \right)$$

MALES 72: FEMALES 100

Average: Males 75.4; Females 73.4
 Minimum " 67.6 " 67.2
 Maximum " 85.5 " 85.9

TABLE OF FREQUENCIES

Index	67.2 70	70.01 72.5	72.51 75	75.01 77.5	77.51 80	80.01 82.5	82.51 85	Above 85
Males: Per cent.....	3	20	9	20	15	3	2	.....
Females: Per cent.....	10	27	23	23	10	5	1	1

DIAMETER FRONTAL MINIMUM

Average: Males 10.6 cm.; Females 10.2 cm.
 Minimum " 9.6 " " 9.2 "
 Maximum " 11.6 " " 11.2 "

TABLE OF FREQUENCIES

Cm.	9.2 9.5	9.6 9.9	10.0 10.3	10.4 10.7	10.8 11.1	11.2 11.5	11.6
Males: Per cent.....	.....	5	8	44	34	7	2
Females: Per cent.....	9	19	37	24	10	1	.....

Lower Part of the Face.—The diameter between the most prominent parts of the angles of the lower jaw (bigonial) gives in the Americans the averages of 10.7 cm. in the males and 9.9 cm. in the females, which are very moderate dimensions and below the average in most groups of European whites.

DIAMETER BIGONIAL

Average: Males 10.7 cm.; Females 9.9 cm.
 Minimum " 9.2 " " 8.5 "
 Maximum " 12.- " " 11.3 "

TABLE OF FREQUENCIES

Cm.	8.5 8.7	8.8 9.1	9.2 9.5	9.6 9.9	10.- 10.3	10.4 10.7	10.8 11.1	11.2 11.5	11.6 11.9	12.0
Males: Per cent. ....	.....	.....	1	8	21	20	26	16	6	2
Females: Per cent.	1	3	17	35	28	13	2	1	.....	.....

THE NOSE

The nose of the Old Americans is prevalently long and of medium breadth. It is longer than that in any immigrants coming to this country who have so far been measured,¹ with the exception of the English, in whom the proportions, as to both length and breadth, are practically identical with those of Americans.

The average nasal index in both sexes is moderately leptorhinc, being as usual slightly lower (relatively narrower nose) in the females than in the males. In both sexes the index is almost the same as in modern French.²

NOSE: HEIGHT

Average: Males 5.37 cm.; Females 4.94 cm.
 Minimum " 4.5 " " 4.2 "
 Maximum " 6.3 " " 5.7 "

TABLE OF FREQUENCIES

Cm.	4.2- 4.3	4.4- 4.5	4.6- 4.7	4.8- 4.9	5.- 5.1	5.2- 5.3	5.4- 5.5	5.6- 5.7	5.8- 5.9	6.- 6.1	6.2 6.3
Males: Per cent. ....	.....	2	1	4	10	27	32	12	8	3	1
Females: Per cent.	3	7	16	23	26	20	3	2	.....	.....	.....

NOSE: BREADTH

Average: Males 3.6 cm.; Females 3.3 cm.
 Minimum " 3.0 " " 2.8 "
 Maximum " 4.2 " " 3.8 "

TABLE OF FREQUENCIES

Cm.	2.8- 2.95	3.- 3.15	3.2- 3.35	3.4- 3.55	3.6- 3.75	3.8- 3.95	4.- 4.15	4.2
Males: Per cent. ....	.....	2	16	25	31	19	5	2
Females: Per cent.	8	22	34	24	10	2	.....	.....

¹ Comprising Armenians, Croats, English, Greeks, Russian Jews, Irish, South Italians, North Italians, Magyars, Poles, Roumanians, and Russians.

² Collignon's data, La nomenclature quinaire de l'indice nasal du vivant; *Revue d'Anthropologie*, 1887, p. 16.

NASAL INDEX $\left(\frac{B \times 100}{L}\right)$

<i>Average:</i>	Males 67.1;	Females 66.6
Minimum	" 56.9	" 54.5
Maximum	" 84.4	" 78.8

TABLE OF FREQUENCIES

Index	below 55	55.1 60	60.1 65	65.1 70	70.1 75	75.1 80	above 80
Males: Per cent. ....	.....	7	30	39	18	2	4
Females: Per cent.	2	13	23	35	19	8	1

MOUTH

The mouth shows medium breadth in both sexes of the Americans, and its averages equal exactly those obtained on the French by Testut.¹ Curiously enough, as already mentioned, the nasal index in the Americans is also almost identical with that in the French.

MOUTH: BREADTH

<i>Average:</i>	Males 5.3 cm.;	Females 4.7 cm.
Minimum	" 4.5 "	" 3.9 "
Maximum	" 6.3 "	" 5.9 "

TABLE OF FREQUENCIES

Cm.	below 4.0	4.- 4.3	4.4- 4.7	4.8- 5.1	5.2- 5.5	5.6- 5.9	6.- 6.3
Males: Per cent. ....	.....	.....	3	25	45	21	6
Females: Per cent.	1	5	26	42	20	6	.....

EARS

The ears of the Old Americans are long. Among the series of immigrants before mentioned it is again only the English whose ear is quite as long as that of the Americans; in all the other groups the ear is from 2 to 5 mm. shorter.

In breadth the ear differs much less than in length in the various groups of whites. In the twelve groups of recent male immigrants to this country it averages from 3.6 to 3.7 cm.; in the males among the Americans it is 3.7cm.

Owing to its considerable relative length, the ear of the Old American gives a rather low breadth-length index.

LEFT EAR: HEIGHT

<i>Average:</i>	Males 6.7 cm.;	Females 6.1 cm.
Minimum	" 5.8 "	" 5.4 "
Maximum	" 8.1 "	" 7.1 "

¹ Data in Martin, Lehrbuch d. Anthropologie, p. 444.

TABLE OF FREQUENCIES

Cm.	up to 5.5	5.6– 5.9	6.– 6.3	6.4– 6.7	6.8– 7.1	7.2– 7.5	7.6– 7.9	8.– 8.1
Males: Per cent . . . . .	.....	2	21	34	29	11	2	1
Females: Per cent	5	31	38	18	8	.....	.....	.....

LEFT EAR: BREADTH

Average: Males 3.75 cm.; Females 3.45 cm.
 Minimum " 3.05 " " 2.9 "
 Maximum " 4.4 " " 4.2 "

TABLE OF FREQUENCIES

Cm.	2.9– 3.0	3.05– 3.2	3.25– 3.4	3.45– 3.6	3.65– 3.8	3.85– 4.0	4.05– 4.2	4.25– 4.4
Males: Per cent . . . . .	.....	2	7	28	38	14	8	3
Females: Per cent	3	11	40	27	18	1	.....	.....

LEFT EAR: INDEX $\left(\frac{\text{Breadth} \times 100}{\text{Length}} \right)$

Average: Males 56.3; Females 56.5
 Minimum " 44.9 " 47.7
 Maximum " 63.8 " 66.7

TABLE OF FREQUENCIES

Cm.	below 50	50.05 52.5	52.55 55.	55.05 57.5	57.55 60.0	60.05 62.5	62.55 65.0	above 65.0
Males: Per cent	2	8	23	31	22	11	3	.....
Females: Per cent	2	11	21	26	29	6	4	1

HANDS

The length of the left hand ranges among the white male immigrants from 18.5 cm. among the Russian Jews to 19.1 cm. among the English and 19.3 in the Irish males; in the American males it is 19.2 cm. The female hand is, of course, considerably smaller.

The breadth of the left hand, measured across the middle of the palm (as indicated in the table relating to this measurement), ranges in the male immigrants from 9 cm. in the Russian Jews to 9.4 cm. in the English, Irish, and three other groups; in the male Americans it is 9.15 cm., indicating in a slight degree relative narrowness, and this is even more marked in the female sex, as will be seen from the breadth-length indices. This relative narrowness of the hand in the Americans as compared with the immigrants is doubtless due to the fact that in the immigrants, owing to their occupations, which are mostly those of workingmen and farmers, the hand is more muscular and hence relatively broader.

LEFT HAND: LENGTH¹

Average: Males 19.2 cm.; Females 17.4 cm.
 Minimum " 17.5 " " 15.2 "
 Maximum " 21.- " " 19.7 "

TABLE OF FREQUENCIES

Cm.	15.2 16.0	16.1 16.5	16.6 17.0	17.1 17.5	17.6 18.0	18.1 18.5	18.6 19.0	19.1 19.5	19.6 20.0	20.1 20.5	20.6 21.0
Males: Per cent	.....	.....	.....	2	5	14	20	27	19	5	8
Females: Per cent	2	11	22	28	22	10	2	1	2	.....	.....

¹ From center of line connecting most proximal points on thenar and hypothenar eminences to end of medius, in extension.

LEFT HAND: BREADTH¹

Average: Males 9.15 cm.; Females 7.9 cm.
 Minimum " 8.3 " " 6.9 "
 Maximum " 10.3 " " 8.6 "

TABLE OF FREQUENCIES

Cm.	up to 7.0	7.1 7.4	7.5 7.8	7.9 8.2	8.3 8.6	8.7 9.0	9.1 9.4	9.5 9.8	9.9 10.2	10.3
Males: Per cent	.....	.....	.....	.....	9	34	30	22	4	1
Females: Per cent	2	6	32	48	12	.....	.....	.....	.....	.....

¹ From intersection of the straight line forming externally the boundary of the index finger and the palm, with the thumb—to a point on the opposite boundary of the palm, midway between the line indicating the root of the little finger and that limiting proximately the hypothenar eminence.

LEFT HAND: INDEX $\left(\frac{\text{Breadth} \times 100}{\text{Length}} \right)$

Average: Males 47.6 Females 45.5
 Minimum " 44.6 " 40.6
 Maximum " 52.2 " 50.-

TABLE OF FREQUENCIES

Index:	40.0 41.0	41.1 42.0	42.1 43.0	43.1 44.0	44.1 45.0	45.1 46.0	46.1 47.0	47.1 48.0	48.1 49.0	49.1 50.0	50.1 51.0	51.1 52.2
Males: Per cent	.....	.....	.....	.....	7	7	23	23	19	16	2	3
Females: Per cent	1	3	7	8	21	23	18	11	6	2	.....	.....

FEET

The maximum length of the left foot in the American males averages 26.2 cm., which is almost identical with that obtained in the English immigrants (26.15 cm.) and several other groups of newcomers. The female foot is very perceptibly shorter (by 2.9 cm., or approximately 1 1-5 inch.)

The maximum breadth of the foot was found to range from 9.7 cm. in the male Irish, 9.9 cm. in the Russian Jews, and 10.1 cm. in the English, to 10.6 cm. in the Poles—in the American males it is only 9.5 cm. Like the hand, therefore, but in a higher degree, the average American foot is relatively narrow. This narrowness, which is well expressed in the breadth-length index, may again be wholly due to the differences of occupation in the two classes of subjects; but in this case we can not be quite as confident of this conclusion as we were in that of the hands.

LEFT FOOT: LENGTH MAXIMUM

Average: Males 26.2 cm.; Females 23.3 cm.
Minimum " 23.7 " " 20.8 "
Maximum " 29.2 " " 25.7 "

TABLE OF FREQUENCIES

Cm.	20.8 21	21.1 22	22.1 23	23.1 24	24.1 25	25.1 26	26.1 27	27.1 28	28.1 29	29.1 30
Males: Per cent.....	.....	.....	.....	2	14	31	36	11	5	1
Females: Per cent....	1	8	33	36	17	5	.....	.....	.....	.....

LEFT FOOT: BREADTH MAXIMUM

Average: Males 9.5 cm.; Females 8.4 cm.
Minimum " 8.2 " " 7.3 "
Maximum " 10.8 " " 9.8 "

TABLE OF FREQUENCIES

Cm.	7.3 7.6	7.7 8.0	8.1 8.4	8.5 8.8	8.9 9.2	9.3 9.6	9.7 10.0	10.1 10.4	10.5 10.8
Males: Per cent.....	.....	.....	2	13	17	29	19	12	8
Females: Per cent.....	3	23	33	28	8	2	3	.....	.....

LEFT FOOT: INDEX $\left(\frac{\text{Breadth} \times 100}{\text{Length}}\right)$

Average: Males 36.5; Females 36.—
Minimum " 31.4 " 32.6
Maximum " 41.1 " 40.5

TABLE OF FREQUENCIES

Index:	31.1 32.0	32.1 33.0	33.1 34.0	34.1 35.0	35.1 36.0	36.1 37.0	37.1 38.0	38.1 39.0	39.1 40.0	40.— 41.1
Males: Per cent.....	1	2	4	11	19	28	22	11	10	4
Females: Per cent....	.....	6	8	15	24	18	14	8	7	.....

LEFT LEG

The circumference of the left leg in the American males, averaging 36.2 cm., occupies about a medium position when compared with that of the white immigrants of the same sex, in whom the dimension ranges in the average from 34.3 cm. in the Southern Italians to 37.3 cm. in the Poles and Russians.

CIRCUMFERENCE: LEFT LEG

MALES

Average: 36.16 cm. (1st 50: 36.16; 2d 50: 36.17)

Minimum 30.2 "

Maximum 45.0 "

TABLE OF FREQUENCIES

Cm.	30.1- 32	32.1- 34	34.1- 36	36.1- 38	38.1- 40	40.1- 42	42.1- 44	44.1- 45
No. of cases and per cent. . .	6	14	32	27	12	6	2	1

COLOR OF HAIR AND EYES¹

Hair.—While there is no sharp line separating hair of different colors, it is nevertheless possible, for purposes of examination and description, to divide hair color into four classes, which, with practice and due care, can be fairly well separated. These are: (1) the blonds, (2) the browns, (3) the blacks, and (4) the reds. The blonds range from almost an albino white to different shades of flaxen and yellowish. They merge on one hand with the light-browns, which form an intermediary class between true blonds and true browns, and on the other with the golden, which connects the yellow-blonds with the golden-reds. The true browns comprise what is ordinarily designated as the medium and dark shades of hair, without distinct tinge of red. The blacks comprise the very dark or nearly black hair and the true black; while the reds range from golden-red to brick-red on one hand and to very dark-red on the other.

So much for explanation of the terms used. We may now proceed to the results obtained on the first 100 of each sex of the Old Americans. One of the most interesting results is that there were among these first 200 individuals no pronounced blonds. Considering the ancestry of the Old Americans, which was derived chiefly from the Northern Europeans among whom blondness is more or less prevalent, this result can be explained only by the assumption that the environmental differences in the New World tend in general to darken the hair in the course of a few generations. The exact data are shown below. We see 12 per cent among the males and 16 per cent among the females of "light-browns", about half of which number would perhaps ordinarily be classed among "blonds". More than three-fourths of the males and over two-thirds of the females show medium dark or dark hair ("medium and dark brown"). A perfect black was not found, and even the nearly blacks are infrequent. Of the "reds" there were different shades, all with a more or less golden luster. No case be-

¹See "The Eye and Hair Color in Children of the Old Americans", by Beatrice L. Stevenson, following this article.

longing to this category was found among the males, which is probably accidental; but there were 10 per cent of reds among the females.

In brief, it can therefore be said that the Old American adults show very prevalently hair that is medium dark to dark; that in about one in seven the hair is light-brown, and in some of these instances can be classed as medium blond; that there is an absence or great scarcity of the blacks; and that about one in ten of the women have hair of some shade of red with more or less of a golden reflex.

HAIR		
	<i>Males</i>	<i>Females</i>
Light-brown.....	12 per cent	16 per cent.
Medium-brown to dark-brown.....	77 "	68 "
Very dark to black.....	11 "	6 "
Golden-reds and reds.....	—	10 "

In infants and young children of the Old American families, blonds and light-browns are much more common. By inquiring of the adults as to the color of their hair in childhood, the answer was almost invariably that it had been lighter, in some cases very much so, but had darkened gradually with advancing age.

The mustache in men is frequently somewhat reddish, rusty, or grizzly, even though the hair on the head seems completely free of red.

Color of the Eyes.—The conjunctiva in adult Americans only seldom retains any bluish tinge, and pronounced grades of such a tinge is uncommon even in the children.

The colors of the iris are divisible into (1) the grays, (2) the greenish, (3) the blues, and (4) the browns. Besides these pure shades there are eyes of intermediary colors, and others with a mixture of colors in which both the originals are recognizable or represented, such as the blue-brown or greenish-brown. The gray-blues and greenish-blues were classified according to the predominant shade. The results of the examination of the 200 adult Old Americans gave the following:

EYES		
	<i>Males</i>	<i>Females</i>
Gray.....	2 per cent.	4 per cent.
Greenish.....	7 "	10 "
Blues (light, medium, deep).....	54 "	50 "
Brown (light, medium, dark).....	37 "	36 "

The above figures show that nearly two-thirds of the eyes of adult Old Americans are of a relatively light shade, while a little more than one-third are brown; and that there is but little sexual difference in these respects. The full value of these results will of course not appear until we are able to extend the observations considerably and to furnish suitable comparisons.

PHYSIOLOGICAL OBSERVATIONS

Pulse.—In subjects who subjectively or objectively showed no signs of any derangement of health, the pulse averaged in males 70.6 per minute, in females

75.2 per minute, with the subject quiet and in sitting position. The range of individual variation is in each sex about 30 beats.

Respiration.—The average rate of respiration per minute found in the male Americans was 17.2, in the females 18.5, with considerable individual variation in both sexes—males 11-22, females 10-24. As in the case of the pulse, the observations were taken with the subject sitting and in repose.

Temperature.—Under the same conditions, i. e. with the subject seated and at rest, the temperature under the tongue gave in the males the average of 98.5°, in the females 98.7°; with the variations of from 96.7° to 99.4° in the males, and from 97.9° to 99.4° in the females. The sub-average temperatures were recorded mostly in subjects who came for examination before meals; while the maxima occurred soon after the midday meal, or may have been due to transient derangements of the system which were not noticed by the subject or determined by the examiner. The absolutely normal limits are probably 97.5° to 99° in the males, and 98° to 99.2° in the females.

*Muscular Force.*¹—In the male Americans the average pressure of the right hand amounted to 41.4 kg. (24-40), of the left, 37.5 kg. (19-50), which is slightly more than in the twelve groups of white immigrant males, measured for comparison, on the right side and about the same on the left. Notwithstanding the lighter occupations of the Americans who were examined, as a class therefore they compare favorably in this respect with the hard-working and heavier-muscled Europeans.

The matter is, however, different when it comes to the more important strength of the muscles of the arms and shoulders. The traction force averaged in the immigrant males from 21.9 kg. in the Armenians and 23.2 in the Russian Jews, to 25.8 kg. in the Irish, English, Poles, and Russians; in the male Americans it was only 21.3 kg.

The American females made in these tests a poor showing: they averaged only a trace more than one-half the strength of the males in pressure of either hand (right hand 22 kg., left, 19 kg.), and less than one-half in traction (9.25 kg.).

In these determinations, more than in any others, are shown the effects of the widely different habits of life and physical training to which the two sexes of the Americans have been subjected; and the results present a strong indication for closer attention to the body development of the female adolescent in this country, or at least so in the Old American families. It seems, however, as suggested at the beginning of this preliminary report, that this need has already received some recognition, particularly in our colleges for women; but it is general and demands wide and expert attention.

CONCLUSIONS

The study of the actual representatives of the oldest American families has proved throughout one of absorbing interest. The results, however, may prove quite sober and disappointing to those inclined to expect sensational revelations. Nevertheless, they will be valuable both to science and in application. They show quite clearly that no definite, already formed, strictly American type or

¹ Mathieu's or Collin's dynamometer.

sub-type of the whites as yet exists; and as intermarriages of the Old Americans with more recent elements in this country are rapidly becoming more numerous there seems no chance for the formation of something like a separate American type of population, at least within many centuries.

The examinations have shown in many instances a remarkable persistence of heredity characters and their strong individuality, as we may express it, with slow, irregular, unwilling yielding to a complete and permanent fusion with other characters of the same class.

Yet there are indications that some progress has been made toward such a fusion, and that if the Old American families could be kept in full vitality and free from intermixture with newer elements for several more centuries, there would eventually come into existence in this country a real separate sub-type of white people, which would possess numerous if not great distinctive characteristics from the European whites and would be strictly American.

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